

December 2016

## Area Director's Summer Internship Participants

### Vision Statement

**To create a diverse workforce and promote a positive work environment where all employees are respected and valued for their contributions.**

USDA-ARS-Midwest Area Diversity and Equal Opportunity Council (DEOC) members:

Kelli Adkins, Lexington & Bowling Green, KY

Carl Bernacchi, Urbana, IN

Veera Boddu, Peoria, IL

Wayne Coblentz, Chair, Madison, WI

Tom Coudron, Co-Chair, Columbia, MO

Kathy Eystad, Morris, MN

John Kovar, Ames, IA

Renfu Lu, East Lansing, MI

Luis Martinez, Columbus, OH

Larla Moore, West Lafayette, IN

Jacki Morrison, St. Paul, MN

Paul Scott, Employee Engagement Council

Kathy Jones, Employee Engagement Council

Sherri Buxton, Peoria, IL, MWA Office Advisor

Debra Owens-Coleman, MWA ODEO Program Manager, Advisor

The objective of the ARS Midwest Area Summer Internship Program is to provide college undergraduate students with a meaningful work experience as an ARS employee in conducting or supporting research, and to promote career interest in agricultural science and technology within USDA. In FY-16, the Area Office funded 12 Summer Interns and 1 Hispanic Association of Colleges and Universities (HACU) student. We asked our students to provide insight into their job experience. These are the responses we received.

**Melissa K. Davis, West Lafayette, IN**

*How did you learn about the Summer Internship Program?*

I received an email from the coordinator of career services here at Purdue. He had received an email from Dr. Cheng explaining his intent to hire a summer intern, so he forwarded the email to all of the Animal Science students.

*Why did you select ARS for your summer program?*

The USDA is such a well-known company, and having the opportunity to work for a department within that company is such a blessing. Being involved in the research going on here is very educational and fun, but also serves as an incredible amount of experience that I can put towards good use in the future.

*What were your main job duties?*

As a biological science aide, I was able to help my supervisor's grad students on their studies in a variety of ways. Sometimes I would be doing behavioral observations, working in the lab, or going out to the farm to help set up projects or collect samples. I also had the opportunity to help out other scientists with their projects during the summer and gain more experience with other species of livestock.

*How did you benefit from your experience?*

I have learned a lot here working for the USDA. Every day I spend working with animals helps me gain knowledge and experience that I can use in the future.

*What did you like best?*

The best part of my experience was realizing how open and welcoming all of my coworkers were. The scientists are always willing to tell you more about their studies and let you help if you want to.

*Do you have any suggestions for improving the internship experience?*

Knowing more about exactly what I would have been doing a week or so before I started would have been good. On my first day, I wasn't sure exactly what I would be doing, but as soon as I got there, I had a good idea of what I would be working on.

*Did your vision of agriculture production or research change after this experience? How?*

I actually learned a lot about the research industry that I think many consumers are not aware about. A lot of people believe that animal research is wrong, but every day I learned new ways about why it is for the better.

*Based on this experience, are you more likely to consider a career in agricultural research?*

This experience has taught me a lot about agricultural research, and has definitely made me think more about a career within it.

*What advice can you share with others interested in this Summer Internship program?*

It is definitely worth it if you are on the fence about it. I can't think of a reason not to do it. The level of knowledge you would gain from an experience like this is phenomenal, and the people are amazing to work with. The hands on experience has also been much more than what you would be receiving in school.

*Would you recommend the program to others? Why?*

I would recommend this program to others, and in fact, I already have. I want my friends and classmates to be able to learn what I did, and work with the people that I did.

  
**Alyson Humphrey, Lexington, KY**

*How did you learn about the Summer Internship Program?*

I learned about this program via an email sent out by an advisor and colleague.

*Why did you select ARS for your summer program?*

My decision for starting a summer program with ARS was based on two main reasons: improvement of prior bench scientific skills; and the opportunity to learn new information. After reading about the research they conduct in this unit, I thought it would be a great application of my prior research experience. I have a background of research work in the areas of animal and plant sciences, biotechnology, and human physiology. Becoming an intern in Forage-Animal Production Research Unit (FAPRU) was a great opportunity to refresh my formal bench scientific laboratory skills. After reviewing the publications on the research conducted by the

scientists in the unit, I knew that this was a great place to learn about USDA research with a group of very successful scientists. Education and experience gained while working as an intern could expand the breadth of my scientific knowledge and be applied to my personal research interests.

*What were your main job duties?*

My main duties were to assist the scientists in the unit with research projects. I helped to collect sample data for ergot analysis work. I worked with the plant geneticist to conduct germination studies for tall fescue grasses and prepared samples for loline and ergot analysis. I also would help the Research Leader, Dr. Glen Aiken, with some of his research projects. During the stakeholder meeting for the unit, I worked to record stakeholder questions and concerns. I later shared this information with Dr. Aiken.

*How did you benefit from your experience?*

The benefits of my time as an intern at FAPRU are priceless. I not only was able to learn how research is conducted within the unit, I was able to learn how USDA-ARS research is conducted all over the country. The information I was taught I have been able to apply to my research interests and to my major, Nutrition and Food Systems. Understanding the food system is a crucial component to improve access and availability of healthy foods to Americans. The research conducted at FAPRU also has helped me to paint a better picture of how all the sciences, no matter the discipline, are related to each other in some way. My experience has helped me to solidify my decision to attain my Ph.D. and work as a Human Nutrition research scientist.

I was able to work with many different professionals with varying experiences and teaching styles. I learned about microbiology, animal science research, and gained an understanding how common forage plants affect the health of pasture animals.

*What did you like best?*

I liked the opportunity to work with several different scientists in the unit. Some days I worked with the microbiologist, other times the animal scientists and plant geneticist. Working under many different leaders allowed me to learn about different aspects of research within the unit. I was able to help out with the Stakeholders meeting. Here, I learned how the USDA-ARS research scientists work to meet the needs and address the concerns of the community leaders and citizens. This was one of the best experiences because I enjoyed how the USDA's objective is to help American citizens. This to me, is why scientific research is important. Research meets the needs of the people it affects the most. Lastly, I enjoyed the ability to work independently on projects. Whenever needed, the scientists were available to help me with any questions or concerns. They were all effective leaders who taught by example and not by micromanaging.

*Do you have any suggestions for improving the internship experience?*

There is not much I would improve about my time as an intern. I am naturally self-motivated and organized, but others may not be. In the future, I would suggest that there be just a little more structure to intern duties from day to day.

*Did your vision of agriculture production or research change after this experience? How?*

Yes. I think there are many misconceptions of agriculture research presented to the public. I now understand how these misconceptions might come about. Most importantly, I know the truth behind them. Things like learning how different grasses effect the circulation of cattle and how some grasses can lead to a decrease in antibiotic usage in animals are all detailed pieces of information that can help to ensure Americans have an adequate amount of available healthy US produced meats and food products. Agriculture production and research is crucial to the livelihood of Americans. Without the work of the scientists at this unit and all over the country, feeding Americans would be greatly compromised.

**Rachel Brockamp, Morris, MN**

*How did you learn about the Summer Internship Program?*

A meeting with Dr. Jane Johnson, a research soil scientist at the USDA-ARS North Central Soil Conservation Research Laboratory.

*Why did you select ARS for your summer program?*

I worked as a research assistant at this facility in the past. The familiarity with the work environment and the appeal of conducting my own research drew me to the position. I knew that undergraduate research experience would benefit my education and graduate schools I apply to in the future.

*What were your main job duties?*

My main job duties included collecting and analyzing samples. This required patience and attention to detail. I was responsible for interpreting the data, writing a report, and creating a poster. The poster was presented at a public Field Day held by the USDA-ARS NCSCRL facility in July 2016. My additional responsibilities included helping with other research projects and communicating with my coworkers and supervisors.

*How did you benefit from your experience?*

I learned a great deal about the arbuscular mycorrhizae I was working with. I also learned how to properly produce graphs and information to represent my data. This research project influenced my interest in graduate school, where I plan to pursue a degree in soil science.

*What did you like best?*

Managing a project like this was a great responsibility and I thoroughly enjoyed it.

*Do you have any suggestions for improving the internship experience?*

Nothing I can think of.

*Did your vision of agriculture production or research change after this experience? How?*

I have a more positive outlook on the research side of agriculture. When I worked as a research assistant I disliked the amount of effort that goes into collecting the samples. I realize now that the more interesting part was the analysis and presentation of the data.

*Based on this experience, are you more likely to consider a career in agricultural research?*

If I pursue soil science, the career opportunities will likely involve agriculture. I would not mind pursuing a career in agriculture if it's in a subject that interests me.

*What advice can you share with others interested in this Summer Internship program?*

Try not to lose patience. Sometimes equipment malfunctions, samples are compromised or the task takes longer than expected. That's the nature of research. Not everything goes well one hundred percent of the time. That's part of the learning experience.

*Would you recommend the program to others? Why?*

Yes. I enjoyed working here with people that respected me. I could ask questions and ask for help when I needed it. All the resources I needed were available. This was an experience I won't forget.

**Vevizhi Rathinavelu, Peoria, IL**

*How did you learn about the Summer Internship Program?*

The University of Illinois at Urbana-Champaign has a career-recruiting platform called I-Link in which Employers can post jobs and summer internships and students can put out their resumes to search for jobs. I was skimming through jobs related to technology and business, and I came across the job title: Agricultural Research Services-Management Analyst Intern in Peoria, IL. Then I read through the description, learned more through the interview, and applied online with my resume.

*Why did you select ARS for your summer program?*

Although I am studying business, I am very interested in environmental science, sustainability, biofuels, and technology and have taken several classes in chemistry, biology, and geology to supple-



ment my core business curriculum. I thoroughly enjoy learning about research and how research impacts the human population. I am also interested in helping the community as this global food crisis approaches. Since ARS's mission is to compose solutions to the agricultural problems that society faces through research, I knew that I would enjoy working for a company that has an impact on all aspects of the society from the environment to its people. Also, this role involved designing websites and learning about the budget and office duties, which fits my major within the UIUC College of Business.

*What were your main job duties?*

My main job duties involve designing and updating the Midwest Area website, filling out travel authorizations & travel vouchers for the Area Office, creating different types of excel spreadsheets to store information about ARS Research Proposals & MWA Leadership Conference, and performing general office duties. I worked in areas involving creating certificates, designing hotel & travel information with a variety of cuisine options for the MWA Leadership Conference, and helping plan the Midwest Area Leadership Conference. I also learned about editing videos and how the government budget works for ARS.

*How did you benefit from your experience?*

I was able to learn a variety of skill sets, and I learned how planning the Midwest Area Leadership Conference involved a lot of work. We went from making nametags, creating excel spreadsheets, estimating costs, coordinating conference calls with other areas, visiting different hotels to price them to fit with budget constraints. There are so many small processes that make this conference up, and it was amazing to see all the parts fall together.

Through designing the website, I had to learn a new Content Management System, learn how to upload videos onto the website, and work on problem-solving skills when the web page didn't turn out as expected, and then figure out why this part of the website was not working. I learned more about the applications of my marketing and design background, which was exciting. I also was able to learn skills such as booking travel, reading over research proposals for grammar, working on event travel, and attend job shadowing with an IT Specialist and Budget, Travel, and Agreements Branch Chief, which was eye-opening to help discover my own interests.

Through sitting in meetings, I was able to learn about how the Agricultural Research Services was structured within the USDA, how the government functioned, and how the government came up with solutions to certain projects. That itself was fascinating. I also was able to be placed in a real-life work environment and actively participate and communicate with the members of Area Office, which was a valuable work experience.

*What did you like best?*

I enjoyed working with a group of wonderful people in the Agricultural Research Service. Everyone was very helpful when I had questions and was willing to take the time to get to know me. Also, I enjoyed being exposed to a variety of websites and being able to work with technology and design, as these are two aspects that I am interested in. I also enjoyed the ODEO presentation I went to and how ARS is really involved with bringing diversity and providing everyone with equal opportunities.

*Do you have any suggestions for improving the internship experience?*

I had a wonderful time working here. I enjoyed my office duties and working on the website was both challenging and very interesting. Creating a few events for interns from different areas to get together could be beneficial. Also, a lot of the times, there were access issues that prevented me from being able to help the area office at my maximum potential. Perhaps speeding up the process of attaining the LincPass and access to files could help.

*Did your vision of agriculture production or research change after this experience? How?*

I would say that I've always been fascinated by different scientific discoveries and about how agriculture has been produced. I did not directly work with the scientific part of agricultural production, but I did learn a lot about the new scientific discoveries in the Agricultural Research Magazine, in my time and also through reading research proposals. Science is simply exciting.

*Based on this experience, are you more likely to consider a career in agricultural research?*

As a student studying business, it is unlikely that I will go into direct agricultural research. However, I will say that in the future, I could see myself working in the business or IT department of a company that is related to agriculture. Agriculture plays a huge role in humanity's food supply, innovation, and environmental sustainability, so if a job involved data analysis in agriculture or business in agriculture, I would definitely keep my options open and be interested in a similar career.

*What advice can you share with others interested in this Summer Internship program?*

Working in the area office and a government environment involves balancing multiple duties at the same time. If you decide to do the Summer Internship Program, make sure to have some type of calendar to stay organized. It was very exciting to be involved in multiple projects, and the way I personally stayed organized was having a calendar to write down my tasks for the day out in multiple, different-colored pens. Everyone is very nice at the Agricultural Research Service in Peoria, IL, and if you enjoy working hard,

learning more about the government, meeting a diverse group of individuals, then this Summer Internship Program would be good fit.

Also, if you are still in the application process, my advice to you would be to get involved in taking leadership roles in whatever activity you are interested in at school whether it's Badminton Club or a School Newspaper. During my summer internship experience, I gained a lot of marketing experience from my leadership role working on a magazine and it came to be useful when I was designing web pages and trying to figure out the best way to market these pages out in the web and provide the necessary information on the website. Moreover, having these leadership roles help you become better at communicating with others.

*Would you recommend the program to others? Why?*

I would definitely recommend this program to others. I received a large amount of exposure to different aspects of working in the government and different types of skills. It's truly fascinating how the government works, and how you get to see the ins and outs of how these conferences are structured while building professional experience. Moreover, the most exciting part was seeing my work going online for the public to see after the internship, which is another nice part about doing an internship involving web design.

To add to the beneficial work experience, the people and culture of ARS are professional, diverse, and kind, which makes the experience even more worthwhile. Also, you get to learn about the scientific discoveries and progress within agricultural food production, while working for an organization that helps solve our world's problems.

## High School Honor Students Doing Research in the SBRU

Written by: J. M. McGrath  
Sugarbeet and Bean Research Unit, East Lansing, MI

Every year, 20 to 30 exceptionally bright and talented high school juniors from around the country gather on Michigan State University for a *bona fide* research experience. In a nutshell, their task may be likened to completing a Master's Level project in seven weeks, or come as close as possible to the intensity of that experience. Few arriving students have the specific knowledge or skills to complete their tasks as they begin. What they have is an open mind and desire to learn, to contribute, and to do well. They leave with a sense of accomplishment, an experience they can leverage towards college admission, and a true sense of the pace and uncertainties of research.

The MSU High School Honors Science/ Mathematics/ Engineering

Program (HSHSP) began in 1958 for local East Lansing high school students and has gradually expanded by attracting high school students just completing their junior year from across the US. Students face a rigorous application process that includes an essay relating their interest in science and in research and its origin as well as an essay that describes the impact any single book has had on their life and their thinking. This is in addition to high school transcripts, copies of standardized test scores, and two letters of reference from their high school teachers (including a science teacher) speaking to their motivation, maturity, and independence. Financial aid is available for accepted students that demonstrate need. Accepted students indicate their preferences as to research subjects, and are matched as best possible with available mentors.

The Sugarbeet and Bean Research Unit provided mentorships for HSHSP students for the past 20 years, and this has been an extremely rewarding and intellectually challenging adventure. The students working in our laboratories, generally one student per summer, have a good grasp of academics and their agricultural knowledge is at least on par with the general populace. In the beet lab, the concept of getting their sugar from a beet is a novel idea to most, and few have seen a sugar beet or thought about the pests and diseases that daily impact the livelihood of any crop grower. That there is a science to sugar beet is readily grasped, and it is truly amazing how quickly these students embrace modern concepts and dive into projects. The student's first week is utter chaos and uncertainty reigns as their general preference and ideas about research begin to morph into actionable agendas. Collaboration and mentorship is needed in choosing and conducting a project, and in large part depends on both interest of the student and research resources available. By the second week, ideas are taking shape on paper and preliminary experiments are started. By the third week, the project work is well underway and will likely continue throughout the rest of their stay, often with increasing urgency to find the answer to 'the question' before they return to high school as seniors. At all stages, the student and mentor discuss approaches, interpret results, continually revisit the goals of the project, and where the results are pointing towards the next step. In research, there are no guarantees, but only the opportunities to look and learn about something as weird and unknown as sugar beets.

And find they do. Towards the end of their stay, in a formal setting with their peers, they report on their findings as if they were presenting at a scientific conference, and write a final research paper developed from the formal proposal they submit mid-term. Often these final papers are ultimately submitted as research reports to industry partners and stakeholders. Projects are often inspired from grower concerns. Disease is a constant concern, so for sugar beet, questions such as 'what genes are present in beet that could provide resistance?' are approachable experimentally.

HSHSP students have provided a first look at such genes. They also have examined characters of pathogens that can interact with these host genes. ‘What else is a sugar beet good for?’. HSHSP students have looked at the potential for beets to provide novel sugars for polymer feedstocks, and provided the first insights that simple sugars such as xylose could be economically extracted from flowering stalks and seed coats. ‘What genes control sugar accumulation to such luxurious levels?’. HSHSP students have mapped genes using novel techniques that they have had a hand in creating. HSHSP students were involved in parsing the first large transcriptome datasets for beets, and in confirming and extending current knowledge and pointing in new directions for a host of interesting ideas. That these students have leveraged their experiences through HSHSP, been accepted into highly competitive and prestigious universities, and gone on to be productive in science, technology, and engineering fields is most gratifying to our unit scientists as a mentor.

## MWA Hosts USDA Wallace-Carver Fellows

By Debra Owens-Coleman  
Acting MWA Program Manager, ODEO

ARS scientists have, over the years, provided excellent 6 – 8 week paid internship opportunities to exceptional high school and college students through the prestigious USDA Wallace-Carver Fellowship Program, a partnership with the World Food Prize Foundation. The Location responsibilities are the salary (grade is based on how Human Resources Division classifies the position and the student’s qualifications), a research project, and mentoring. In addition, the fellows participate in a high-level week-long Wallace-Carver Leadership Symposium in Washington, DC hosted by the USDA Secretary.

“The Wallace-Carver Fellowship exposes the best young minds in agriculture to the wide variety of opportunities available to them through civil service. Their experiences as Fellows will prepare these exceptional young leaders to carry out the vital research and innovation we will need to address the challenge of feeding a growing global population.”

- U.S. Secretary of Agriculture Thomas Vilsack

During the summer of 2016, MWA hosted 10 Wallace-Carver Fellows at various research facilities. Eight were placed at Ames, IA; one at Peoria, IL and one at St. Paul, MN. There Pictures of some of the fellows at work in MWA labs are on page 8, and the following is a description of their research project.

## Ames, IA Location National Animal Disease Center (NADC), Food Safety and Enteric Pathogens Research

**Raegan Hoeffler** (Iowa State University)

**Mentor:** Dr. Indira Kudva, Research Microbiologist

**Research Project:** Focused on developing strategies to control Shiga toxin-producing *Escherichia coli* (STEC) that are innocuously present in cattle intestines but can cause serious and often fatal infections in humans. In this context, Raegan utilized polymerase chain reaction (PCR)-based techniques, (i) to study genomic similarities/differences amongst STEC serotype O157 isolates that are shed in larger numbers (super-shed) by cattle and comparing them to other well-characterized, non-super-shed STEC-O157 isolates, and (ii) to differentiate STEC-O157 from closely-related bacteria adhering to bovine intestinal tissues in cattle experimentally infected with these bacteria. For the first project, Raegan learned and applied the ‘Polymorphic Amplified Typing Sequences (PATs)’ system to analyze the bacterial isolates. She observed some genomic diversity among the super-shed STEC-O157 isolates, with a few isolates demonstrating unique genetic profiles compared to the non-super-shed STEC O157 that will need further investigation. This diversity is an epidemiologically important observation that will have to be factored in when developing STEC diagnostic and/or control strategies for cattle herds. In the second project, Raegan assisted in standardizing a PCR technique for amplification of bacterial DNA in tissue samples, captured using Laser Capture Microscopy (LCM). The PCR technique enabled Raegan to differentiate STEC from closely related non-*E. coli* bacteria such as *Shigella sonnei*, adhering to intestinal tissues from experimentally infected cattle. This is an important technique that may be used as a confirmatory tool when bacteria of interest are found adhered to tissues using microscopy but are not recovered in cultures because of their low counts. These two projects enabled Raegan to gain several molecular biology and microbiology skillsets. She also learned other laboratory techniques including biosafety protocols, media preparation, immunofluorescence staining for microscopy, and participated in research paper-discussions at weekly lab meetings. Based on Raegan’s enthusiasm and interest to further explore food safety-related research being conducted at the USDA, she has now been hired as a L/A appointee (a 180-day appointment) in her mentor’s laboratory.

**Morgan Smith** (Iowa State University)

**Mentor:** Dr. Heather Allen, Research Microbiologist

**Research Project:** Probing for specific bacterial populations in the swine gut microbiota. Morgan learned how to consult the primary literature, troubleshoot a reaction, analyze data, and figure out how to present it. At the end of the summer Morgan presented a 15-minute PowerPoint presentation of her work in a symposium for all NADC summer interns.

Morgan was particularly driven and eager. She had just graduated from high school in May 2016 and was so excited to be doing real research. She was successful with her project. Morgan was also interested in participating in an outreach activity her mentor coordinated, which involves delivering small science lessons to underperforming 3-4<sup>th</sup> grade students during summer school. On the day she came to help, the Governor of Iowa stopped by! On page 8 is a picture that shows Morgan interacting with a student while he interacts with the Governor. USDA-ARS tweeted this photo in July.

**Cinthia Wilkinson** (Iowa State University)

**Mentor:** Dr. Mathew Sylte, Research Veterinary Medical Officer

**Research Project:** Express recombinant proteins in E. coli to be used as vaccine antigens. It was a pleasure to work with her and she gained some valuable insight to her career interests of working in the biotechnology industry, specifically vaccine preparation.

#### **National Laboratory for Agriculture and the Environment (NLAE)**

**Bradley Pickhinke** (Iowa State University) (pictured on page 8)

**Mikel Wright** (Iowa State University) (not pictured on page 8)

**Mentor:** Dr. Jerry Hatfield, Laboratory Director and Supervisory Plant Pathologist

**Research Project:** Efforts were part of a large scale research program to quantify the plant response to the environment and management practices. Bradley and Mikel gained experience in data collection and processing for field experiments while learning how to operate different equipment required to measure physiological parameters of plants. Mikel is continuing to work in the lab supporting the research program.

#### **Peoria, IL Location National Center for Agricultural Utilization Research Functional Foods Research**

**Theresa Brehm** (Iowa State University)

**Mentor:** Dr. Sean Liu, Research Leader

**Research Project:** Preparing soybean samples for laboratory analysis. The project was funded by the United Soybean Board. Title: "Project # 1520-832-8274, Developing Accurate and Globally Accepted Near Infrared Reflectance (NIR) Analytical Standards of Soybean Sugar Compositions."

#### **St. Paul, MN Location Soil and Water Management Research**

**Matthew Wilhem** (Texas A&M University)

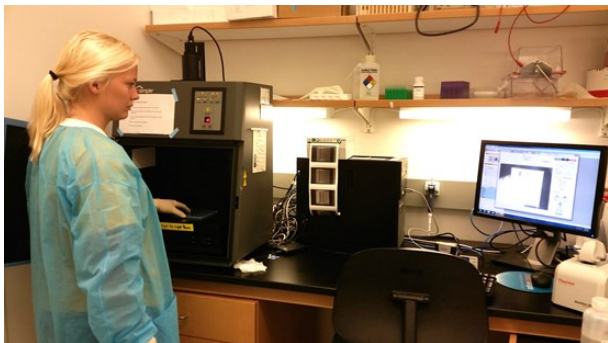
**Mentor:** r. Kurt Spokas, Soil Scientist

**Research Project:** Analyzing the effect of biochar in soils.



## USDA Wallace-Carver Fellows Participants

Raegan Hoefler



Theresa Brehm



Cynthia Wilkinson



Bradley Pickhinke



Matthew Wilhem



Morgan Smith





# Morris, MN Summer Internship Participants

Talisha Zimmerman and Mary Folstrom, two Native American students at the University of Minnesota, Morris, were hired as summer research interns to acquire and analyze wild rice samples at 3 separate lakes.

The Wild Rice project is a cooperative 2 year study between the White Earth Tribal Community College (WETCC) at Mahnomen MN., the United States Geological Service (USGS) and the ARS-North Central Soil Conservation Research Laboratory in Morris, MN. The project was developed to investigate the environmental impacts at the temporal and spatial level on Native Wild Rice.



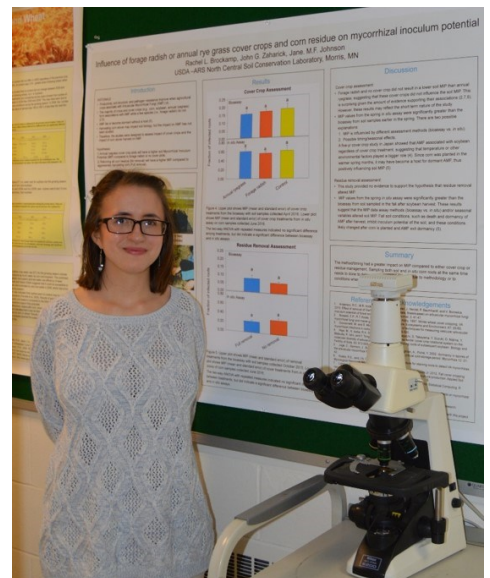
Mary Folstrom



Talisha Zimmerman



Mary Folstrom



Rachel Brockamp



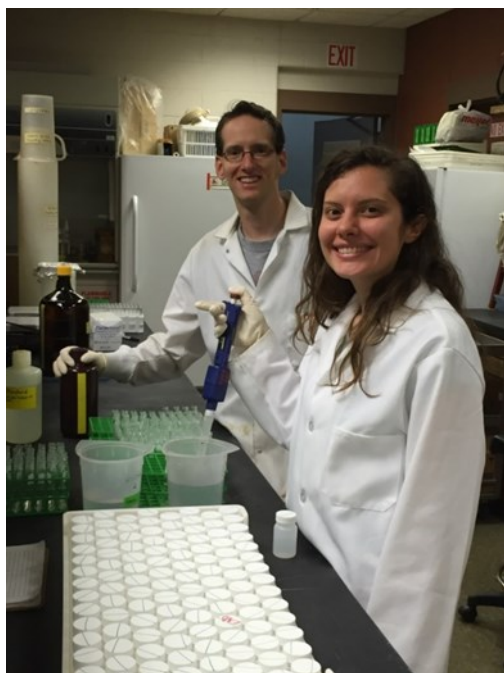
## Students Working in the Midwest Area



**West Lafayette, IN** - Phil Szyjka, student intern and Stan Livingston, Soil Scientist, discuss the creation of an electronic controller for use on Phil's blind inlet simulator project. Phil evaluated the use of slag as a remediation material for phosphorus in drainage water.



**Urbana, IL** - Taylor Pederson (left) and Justine Brumm (right) are sampling sorghum leaves.



**Columbus, OH** - ARS student employee, Elizabeth Callow, completes a persulfate digestion, preparing samples for analysis with Eric Fischer, Chemist, supervising.

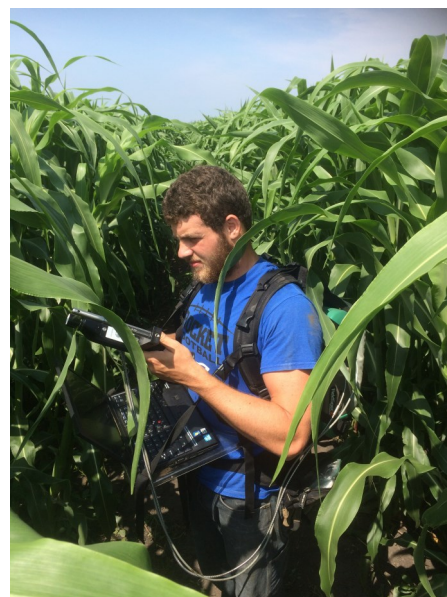


**Ames, IA** - Paul Scott, with his students studying developing corn varieties tailored to organic production systems. Adrienne Moran Lauter (Plant Biologist), Bridget McFarland (Undergraduate Student), Hannah Worral (Graduate Student), Ryan Huffman (Graduate Student), Taylor Hintch (Undergraduate Student – Wallace-Carver Fellows Participant).

## Students Working in the Midwest Area



**Urbana, IL** - Chenqui Zhu is installing hyper-spectral information on a Field Roving Evaluation Device (FRED) for high-throughput phenotyping of bioenergy crops.



**Urbana, IL** - Kyle Chandler is collecting leaf data on maturing sorghum plants.



**Urbana, IL** - Justine Brumm, Kyle Chandler, Veronica Passarelli (Undergraduates) and Ben Harbaugh (Technician) are planting tobacco, as a model species, to assess photosynthetic efficiency.



## Special Emphasis Programs/Observances/Resources and Information

By Debra Owens-Coleman

Special Emphasis Programs (SEPs) are an integral part of the overall civil rights, human resources and program delivery functions. The purpose of the SEPs is to provide oversight, guidance, direction, enforcement and assistance to enhance opportunities for women, minorities, and people with disabilities in all employment and program delivery activities.

**Employment activities:** Recruitment, hiring, promotions, separations, awards, training, or any other employment action which impacts on the inclusion of and equal opportunity for women, minorities, and people with disabilities.

**Program delivery activities:** These activities include outreach, training, public notification, program accessibility or any system, practice or procedure or other activity which increases the knowledge of and participation by women, minorities, and people with disabilities.

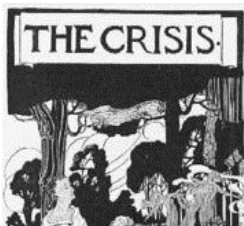
### Special Emphasis Observances, and resources and information for January through April 2017:



**Monday, January 16<sup>th</sup>, is Dr. Martin Luther King, Jr. (MLK, Jr.) Day of Service, "Day On, Not A Day Off."** The MLK, Jr. Day of Service is a way to transform Dr. King's life and teachings into community service that helps empower and strengthen local communities. *Source* *United We Serve Corporation for National and Community* <https://www.serve.gov/site-page/mlkday>

**Resources & Information:** *United We Serve* (<https://www.serve.gov/site-page/mlkday>). Find a project, register a project and promotional materials.

**Check out resources to get started:** *Getting Started Toolkit* or access <https://www.serve.gov/site-page/toolkits>

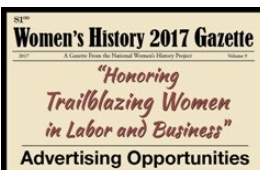


#### Black History Month, Month of February

**National Theme:** "The Crisis in Black Education"

**Resources & Information:** Library of Congress—The African American Mosaic <https://www.loc.gov/exhibits/african/intro.html>

African American History & Heritage Site <http://www.creativefolk.com/blackhistory/blackhistory.html>



#### Women's History Month, Month of March

**National Theme:** "Honoring Trailblazing Women in Labor and Business"

**Resources & Information:** USDA Women in Agriculture Employee Group

Contacts: Kimberly Graham, WIA Chair, [Kimberly.graham@osec.usda.gov](mailto:Kimberly.graham@osec.usda.gov) or Carrie Moore, WIA Vice Chair, [carrie.moore@dm.usda.gov](mailto:carrie.moore@dm.usda.gov)

Email [WIAEmployeeGroup@usda.gov](mailto:WIAEmployeeGroup@usda.gov) to be added to the mailing list

Women in Ag Blog - <http://blogs.usda.gov/category/women-in-ag/> (enter your email under "Sign up for Email Updates" on the left to receive notifications)

National Women's History Project (707) 636-2888 [www.nwhp.org](http://www.nwhp.org)

4,000 Years of Women in Science <http://www.astr.ua.edu/4000WS/>

Ms. Foundation for Women <http://forwomen.org/?gclid=CNXqzdXvy8MCFYdj7Aodl0cAmw>



#### Take Our Daughters and Sons to Work Day, April 27<sup>th</sup>

**Resources & Information:** Take Our Daughters and Sons to Work Foundation <http://www.daughtersandsonstowork.org/>  
Phone: 800) 676-7780

For Presidential Proclamations, right click and open hyperlink [Presidential Proclamations](https://www.whitehouse.gov/briefing-room/presidential-actions/proclamations) or go to <https://www.whitehouse.gov/briefing-room/presidential-actions/proclamations>.

*Continued on next page...*



**Additional resources for diversity awareness material and ideas for special observances (catalog, pins, videos, etc.) are available from the following resources:**

**ARS EEO Video Library:** <http://www.afm.ars.usda.gov/ODEO/files/ARS%20Video%20Library%20Catalog1.pdf>

**Diversity Store:** [www.diversitystore.com](http://www.diversitystore.com); Phone: 800-200-5964; Email – [hmsdc@aol.com](mailto:hmsdc@aol.com)

**Smithsonian:** <http://www.si.edu/>; Phone: 202-633-1000; Email: [info@si.edu](mailto:info@si.edu)

**USDA Department-wide Monthly Observances – Links for Websites:** <http://www.dm.usda.gov/employ/observances.html>

Observance events/activities should be conducted in a most cost-efficient manner. Contact Debra Owens-Coleman, Acting MWA Outreach, Diversity, and Equal Opportunity (ODEO) Program Analyst, at [debra.owenscoleman@ars.usda.gov](mailto:debra.owenscoleman@ars.usda.gov) or 979-260-9416 for additional information.



**You can earn credit for diversity training when you participate in a Special Emphasis Observance event (i.e., Women's Equality Day, Veterans Day, etc.)?**

- ◆ How? There are two options, as applicable:
  1. Record your own learning in AgLearn if the learning item allows users to do so upon completion of the learning item. Access AgLearn and go to Record Learning.
  2. Contact your Designated Location AgLearn Administrator or Debra Owens-Coleman, Acting MWA Outreach, Diversity and Equal Opportunity Program, at [debra.owenscoleman@ars.usda.gov](mailto:debra.owenscoleman@ars.usda.gov) or 979-260-9416.

**We'd love to highlight your Outreach event or share your story.**

**Contributions can be sent to your location ODEO representative.**

U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotope, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD).

**REE Mission Area EEO Counseling:** 202-720-3410, 800-340-4289, TDD: 202-720-3303

<http://www.ars.usda.gov/AboutUs/docs.htm?docid=23089>; Axon: <https://axon.ars.usda.gov/ODEO/Pages/Home.aspx>

**Cooperative Resolution Program:** Jeff Schmitt; 301-504-1352, [jeff.schmitt@ars.usda.gov](mailto:jeff.schmitt@ars.usda.gov) or [coopres@ars.usda.gov](mailto:coopres@ars.usda.gov)

<http://www.ars.usda.gov/odeo/coopres>; Axon: <https://axon.ars.usda.gov/ODEO/Pages/Home.aspx>

**Reasonable Accommodation Program:** Tonya B. Morris, 301-504-4339, [tonya.b.morris@ars.usda.gov](mailto:tonya.b.morris@ars.usda.gov)

<http://www.ars.usda.gov/AboutUs/docs.htm?docid=23085>; Axon: <https://axon.ars.usda.gov/ODEO/Pages/Home.aspx>

**Outreach and Recruitment Branch Area Contact:** Debra Owens-Coleman, 979-260-9416, [debra.owens-coleman@ars.usda.gov](mailto:debra.owens-coleman@ars.usda.gov).

<https://www.ars.usda.gov/AboutUs/docs.htm?docid=23072>; Axon: <https://axon.ars.usda.gov/ODEO/Pages/Home.aspx>

**Office of Outreach, Diversity, and Equal Opportunity (ODEO) Home Page:**

<http://www.ars.usda.gov/ODEO> Axon: <https://axon.ars.usda.gov/ODEO/Pages/Home.aspx>